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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/344,629 06/25/99 RAI

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EXAMINER

AWAD, A	
ART UNIT	PAPER NUMBER

2675
DATE MAILED:

02/28/01

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/344,629

Applicant(s)
RAI et al.

Examiner
Amr Awad

Group Art Unit
2675



☒ Responsive to communication(s) filed on Jun 25, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-29 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-29 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

2. *The following is a quotation of the second paragraph of 35 U.S.C. 112:*

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 21 recites the limitation "the first judgement circuit" in lines 7-8. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-13, 15-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (figures 1-2 and its related text; hereinafter referred to as APA) in view of Helms (US patent NO. 5,952,992).

As to claim 1, APA (figure 2) teaches a liquid crystal display that includes a liquid crystal display panel (100) having a predetermined display characteristic (APA referred to the predetermined display characteristic as predetermined brightness; see top of page 2), a luminescent unit located adjacent to the liquid crystal display panel, wherein the luminescent unit includes a light collector (115) which collects ambient light, and a light source (114); see specification, pages 1-2.

APA does not teach a control circuit electrically connected to the liquid crystal display panel, wherein the control circuit varies the predetermined display characteristic in accordance with the amount of collected ambient light.

However, Helms teaches a method and apparatus for automatically adjusting the brightness level of an LCD based on the ambient lighting conditions (abstract). Helms (figure 2) teaches a brightness control circuitry (204) wherein a microprocessor (204a) is electrically connected to backlight driver circuitry for generating brightness control signals ; see column 3, lines 19-34. Helms (figure 3) teaches that the ambient light signal is used to index the automatic brightness level signal look up table to change the brightness level (predetermined display characteristic); see column 4, lines 1-32.

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include Helms's teaching of having a control unit to change the brightness level (predetermined display characteristic) according to the ambient light to be incorporated to APA's device so as motivated by Helms, to have an intelligent LCD brightness control system which automatically adjusts to the ambient lighting conditions of the environment in which the PC is being used; see column 2, lines 3-6. Furthermore, the brightness level adjustment automatically, without user intervention, thereby reducing the possibility of user error; see column 2, lines 42-46.

As to claim 15, the claim is substantially similar to claim 1, except the citation of a light receiving device for generating a light amount signal corresponding to the amount of light illuminating the liquid crystal display. For that Helms, a photodetector for receiving the ambient light; see column 2, lines 19-35.

As to claim 20, APA (figure 2) teaches a liquid crystal display that includes a liquid crystal display panel (100) having a predetermined display characteristic (APA referred to the predetermined display characteristic as predetermined brightness; see top of page 2), a luminescent unit located adjacent to the liquid crystal display panel, wherein the luminescent unit includes a light collector (115) which collects ambient light, and a light source (114), a cover (121) which selectively close the light collector; see specification, pages 1-2.

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APA does not teach a control circuit electrically connected to the liquid crystal display panel, wherein the control circuit varies the predetermined display characteristic in accordance with the amount of collected ambient light.

However, Helms teaches a method and apparatus for automatically adjusting the brightness level of an LCD based on the ambient lighting conditions (abstract). Helms (figure 2) teaches a brightness control circuitry (204) wherein a microprocessor (204a) is electrically connected to backlight driver circuitry for generating brightness control signals ; see column 3, lines 19-34. Helms (figure 3) teaches that the ambient light signal is used to index the automatic brightness level signal look up table to change the brightness level (predetermined display characteristic); see column 4, lines 1-32.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include Helms's teaching of having a control unit to change the brightness level (predetermined display characteristic) according to the ambient light to be incorporated to APA's device so as motivated by Helms, to have an intelligent LCD brightness control system which automatically adjusts to the ambient lighting conditions of the environment in which the PC is being used; see column 2, lines 3-6. Furthermore, the brightness level adjustment automatically, without user intervention, thereby reducing the possibility of user error; see column 2, lines 42-46.

APA and Helms does not specifically teaches controlling the cover based on the cover driving apparatus. However, Helms teaches a control knob (16) for manually adjusting the

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brightness level; see column 3, lines 7-9. Helms also teaches that the brightness control circuitry adjust the brightness according to the ambient level. Therefore, the user is able to control the ambient light, and the intensity of the backlight. If this teaching would be incorporated to APA's display device; controlling the cover would be controlled by the control device of Helms.

Therefore, it would have been obvious to a person of ordinary skill to automatically control the opening of the cover, so as motivated by Helms, to automatically control the brightness level.

As to claim 26, the claim is substantially similar to claim 20, and is analyzed as previously discussed with respect to claim 20. In addition to that Helms teaches photo detector (14) for receiving the ambient light, which in turn, connected to the backlight of the LCD panel (12) via brightness controller (204). Therefore, the controller has both the backlight intensity and the ambient intensity to generate the second light receiving means corresponding to the total amount of light; see column 3, lines 19-34.

As to claims 2, 6 and 18-19 APA and Helms do not specifically teach that the characteristic includes transmittance, the control circuit changing the minimum transmittance in accordance with the amount of the collected ambient light. However, Helms teaches controlling the brightness in accordance to the collected ambient light which is fairly suggest transmittance control.

As to claims 3-5 and 7, as seen above, Helms teaches adjusting the brightness level in accordance to the ambient light. As it is well known in the art, driving the liquid crystal device

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required a voltage to be applied to the electrodes that form pixels. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to realize that the applied voltage would be changes in accordance to the ambient light, so as to be able to adjust the brightness level.

As to claim 8, Helms teaches a microprocessor (204a) is electrically connected to backlight driver circuitry to control the brightness control; see column 3, lines 19-34. Therefore, the microprocessor (204a) is obviously able to turn the backlight off if the ambient light is enough without using the backlight.

As to claims 9-12, APA and Helms does not specifically teaches controlling the cover based on the cover driving apparatus. However, Helms teaches a control knob (16) for manually adjusting the brightness level; see column 3, lines 7-9. Helms also teaches that the brightness control circuitry adjust the brightness according to the ambient level. Therefore, the user is able to control the ambient light, and the intensity of the backlight. If this teaching would to be incorporated to APA's display device; controlling the cover would be controlled by the control device of Helms.

Therefore, it would have been obvious to a person of ordinary skill to automatically control the opening of the cover, so as motivated by Helms, to automatically control the brightness level. Helms also teaches a microprocessor (204a) is electrically connected to backlight driver circuitry to control the brightness control; see column 3, lines 19-34. Therefore, the

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microprocessor (204a) is obviously able to turn the backlight off if the ambient light is enough without using the backlight.

As to claim 13, as seen above, Helms teaches adjusting the brightness level in accordance to the ambient light. As it is well known in the art, driving the liquid crystal device required a voltage to be applied to the electrodes that form pixels. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to realize that the applied voltage would be changes in accordance to the ambient light, so as to be able to adjust the brightness level.

As to claims 16 and 17, APA (figure 1) teaches first and second substrates (101 & 104), a liquid crystal layer (107) arranged between the first and the second substrates, a seal portion and a display area of the liquid crystal display panel; see the specification page 1. Helms teaches having the light receiver (photodetector 14') on the top of the liquid crystal display (i.e., on top of the substrate). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the light receiver on top of the substrate, as seen in Helms' device so that the ambient light can be easily received by the light receiver.

As to claim 21, Helms teaches a judgement means (step 306 in figure 3) to adjust the brightness control (step 308); see column 4, lines 11-26.

As to claims 22-23, 27-29, the claims are directed towards judgement circuits, one for the cover, one for brightness control, one for contrast ratio, and one for the backlight. These

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judgment circuits are addressed above, with respect to claims 2, 20-21, and would be obvious, using the discussion presented in these claims.

As to claims 24-25, Helms teaches an analog to digital convertor (204c) , judgement circuit (step 306 in figure 3) to adjust the brightness control (step 308); see column 4, lines 11-26.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA and Helms as applied to claim 13 above, and further in view of Koenck et al. (US patent NO. 5,818,553; hereinafter referred to as Koenck).

Note the discussion of APA and Helms above. APA and Helms teach all the limitations of claim 14 except the citation that the light receiving device is located in the proximity of the light collector.

Koenck teaches a contrast control for Lcd wherein a light censor (24) receives ambient light and light emitted from panel (32) and is located in the proximity of light collector (34); see figure 3, and column 2, lines 36-54..

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to adapt Koenck's design to be incorporated in APA's modified device, so as can be suggested from Koenck's figure 3, to have simple design structure that is easy to manufacture. Furthermore, to allow the light receiving part to receive both the ambient light and the backlight.

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Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Blouin (US patent NO. 5,850,205) teaches an automatic contrast control for liquid crystal display.

Grave (US patent NO. 6,144,359) teaches a liquid crystal display utilizing Ambient light.

8. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-6606, (for informal or draft communications, please label

"PROPOSED" or "DRAFT")

hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist)

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703) 308-8485. The examiner can normally be reached on Monday--Friday from 7:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras, can be reached on (703) 305-4718.

Amr A. Awad

Patent Examiner

February 22, 2001.


ALMIS R. JANKUS
PRIMARY EXAMINER